

26. (Amended) A method of producing a nanostructure comprising an anodized film including a nanohole on a substrate having a surface containing at least one material selected from the group consisting of semiconductors, noble metals, Mn, Fe, Co, Ni, Cu and carbon, said nanoholes passing through said anodized film from the surface of said anodized film to the surface of said substrate, wherein said method comprising the steps of:

(i) forming a film containing aluminum on the substrate having a surface containing at least one material selected from the group consisting of semiconductors, noble metals, Mn, Fe, Co, Ni, Cu and carbon; and

(ii) anodizing said film containing aluminum,

wherein in step (ii) the anodization is conducted while monitoring an anodization current and the anodization of said film containing aluminum terminates after a reduction in said anodization current from a steady-state value is detected.

27. (Amended) A method of producing a nanostructure according to Claim 26, wherein the anodization terminates after the anodization current is decreased from the steady-state value of 95% or below of the steady-state value.

28. (Unamended) A method of producing a nanostructure according to Claim 26, wherein an anodization voltage applied to said film including aluminum is supplied from the substrate side.

4 29. (Unamended) A method of producing a nanostructure according to Claim 26, further comprising the step of expanding the diameter of the nanoholes by means of etching, after completion of said anodizing step.

5 30. (Unamended) A method of producing a nanostructure according to Claim 26, further comprising the step of forming an anodization starting point on the surface of said film including aluminum prior to said anodizing step.

5 31. (Unamended) A method of producing a nanostructure according to Claim 30, wherein a recessed portion serving as said anodization starting point is formed on said film including aluminum prior to said anodizing step.

7 32. (Unamended) A method of producing a nanostructure according to Claim 26, further comprising the step of embedding an inclusion into said aluminum oxide nanoholes after said anodizing step.

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7 33. (Unamended) A method of producing a nanostructure according to Claim 32, wherein the embedding of the inclusion is performed by means of electro-deposition.

8 34. (Unamended) A method of producing a nanostructure according to Claim 33, wherein the surface of said substrate includes a high-resistance part, and wherein said method

further comprises the step of converting said surface at the bottom of the nanohole into a low-resistance surface prior to the electro-deposition.

10 35. (Unamended) A method of producing a nanostructure according to Claim 34, wherein the surface of said substrate includes a silicon oxide and said surface is etched with an aqueous solution containing hydrofluoric acid or an alkaline aqueous solution.

11 36. (Unamended) A method of producing a carbon nanotube device, comprising the steps of:

forming a film including aluminum on a substrate having a surface including an n-type semiconductor region;

anodizing said film including aluminum over the entire thickness thereof so as to form an anodized film having a nanohole;

electro-depositing a catalytic fine particle on the surface at the bottom of said nanohole; and

growing carbon nanotubes from said catalytic fine particle in the nanohole.

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